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ABSTRACT

Reference statistics were collected and analyzed for a three-year period from Fall 1975 to Summer 1976 at the Pennsylvania State University Main Undergraduate Library. Reference questions were classified and recorded in three categories: (1) search, (2) ready reference, and (3) directional. Hour of question, interlibrary loan, book, and telephone requests were also recorded. During the three-year period an instructional program for students was conducted consisting of a workbook, self-instructional units, and class instruction. There was an increase in the total number of questions asked from Fall 1976 to Spring 1977. Following introduction of the workbook, the number of directional and search questions increased, while ready reference questions decreased. Peak reference desk use periods were between 10 a.m. and 3 p.m. The statistics sheet, frequency polygons depicting type and number of questions asked, and distribution of questions asked by category and semester, a histogram showing the number of questions asked per semester, and charts listing percentages of questions are appended. (KP)

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Analyzing Reference Desk Statistics: A Case Study

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Analyzing Reference Desk Statistics: A Case Study

The measurement and evaluation of reference desk services is an idea that has been trumpeted for several years at conferences and in the professional literature. As a result, the maintenance of reference desk statistics has been heralded as a method of gathering sufficient data from which an objective analysis can be made concerning what is actually happening at the reference desk. Katherine Emerson, who chaired the Symposium on Measurement of Reference at the 1974 ALA Conference in New York, remarked at that time on what reference statistics mean to many librarians.

> The phrase "reference statistic" often calls to mind a collection of meaningless hatchmarks on a piece of paper, diligently recorded and totaled each month but never heard of again. The harried reference librarian has thus had his workload increased by having to record statistics, rather than balanced out by intelligent utilization of them. [1]

Billy R. Wilkinson, in his study on reference services to undergraduates, concluded that further research was needed "to continue the detailed documentation necessary for developing in the . . .

measurement and evaluation of reference services." [2] His own research, being quite selective by studying only four institutions, does not constitute the final word on reference services to undergraduates. Obviously, an institution trying to evaluate its services must examine the reference operation in that library. This paper reports on the three year experience of collecting and analyzing reference desk statistics at the Pennsylvania State University's Main Undergraduate Library. Ostensibly intended as an internal management tool to more accurately gauge the amount and peak periods of student activity at the reference desk, the maintenance and analysis of these statistics shed light on some interesting user patterns and also provided the librarians with data by which instructional programs were more objectively evaluated.

The librarians and information assistants in the Main Undergraduate Library recorded information daily on a standardized reference desk statistics sheet (see Appendix). The format of this statistics sheet enabled the librarians to collect data on the type and number of reference questions asked during its hours of staffing. Tallies were personally recorded at the conclusion of the reference interview, thereby placing the burden of reliability upon the individuals in the reference department. Although this method of collecting reference desk statistics is the most widely

accepted, the possibility of introducing a significant degree of error emerges. The librarians anticipated this problem from the study's outset and closely monitored the information assistants' activities to ensure the study's reliability. From the librarians' observations, the tallies were faithfully recorded, thus ensuring that the statistics were as accurate as possible.

The philosophy of reference service among the reference librarians was to provide a high level of interaction with students so that instructional services accompanied answers to questions requiring the use of reference materials, indexing and abstracting services, and the card catalog. The librarians determined that because the Main Reference department encountered the most time consuming questions asked by students and faculty, the UGL could provide the role of extended instructional service to students requesting assistance at their reference desk.

The three categories of reference questions in which information was recorded were: (1) search, (2) ready reference, and (3) directional. The criteria governing a question's inclusion in one of these three categories follows.

Search questions required the librarian to consult two or more information sources. An example is a literature search where the

student is searching for information on a particular subject by using the card catalog, bibliographies and indexes.

Ready reference questions involved one tool, such as using an almanac to find a fact, using the card catalog to locate a book for a student, or teaching a patron to use the PSU Serial Holdings volumes. In addition, ready reference included cases where the librarian referred a student to a particular title located in another section of the library.

Directional questions required the use of no library resources in the answer. While some instruction in sources and materials took place with search and ready reference questions, no instructional activity was experienced for directional questions.

In determining this criteria, the librarians based their decisions on past observations and the instructional emphasis of their reference service, rather than on the time factors considered important by Billy Wilkinson in his study on reference service for undergraduates.[3] The librarians trained the part-time information assistants[4] in the reference interview so that a student with a library skill deficiency in a certain area could receive some library instruction at the time of his question. During the information assistant's learning process at the reference desk,

some questions might take longer to answer than others. This, in addition to the time expended during the instruction, lead to the decision to categorize solely by the type of question asked rather than by considering the arbitrariness of the time spent answering a question.

During Fall term 1974, a meeting among the UCL reference staff was held in which the maintenance of desk statistics was discussed. All agreed to try to make a tally for each question asked so that any analysis would be representative. For the total picture, the librarians were curious to learn if the analysis of the desk statistics would reveal any user trends or behavioral patterns that observation had not, or if it would merely affirm what was already assumed to be true. In terms of specifics, questions were presented pertaining to peak periods of use during the day, relationships between the three types of questions asked, and user patterns affected by changes in reference desk service.

For Fall term 1974, the weekday workload was compared to the weekend workload. The number of questions asked in relation to the hours of service was approximately the same. 62.5 hours of desk service were given during the week. This amounted to 39% of all total hours of desk service given at the Main UCL and 65% of all the Fall term questions. Therefore, the librarians felt that their

staffing that term was consistent with user needs. There was not an inordinate amount of reference desk activity on weekends, nor was there an indication that increased staffing was needed. The librarians attributed what was perceived as only an average amount of weekend use to students' attendance at athletic events and to weekend trips home.

The distribution of questions asked for Fall term (see Exhibit 1) according to the type and number presented interesting parallels for the three categories. Each category (search, ready reference, and directional) showed that a modest number of questions were asked between 8:00 A.M. and 10:00 A.M.; that a substantial increase occurred from 10:00 A.M. to 12:00 noon; and that there was a drop from noon to 3:00 P.M. to approximately the 10:00 A.M. to 12:00 A.M. level when the number of questions remained consistent until 10:00 P.M., when the day's reference service ended.

The three categories of questions were examined according to the percent each comprised of the total number of questions asked. Two-thirds (67%) of the three thousand and seven questions were directional, one quarter (25%) were ready reference and the remainder (8%) were search questions. The librarians considered two factors to be primarily responsible for the seemingly large amount of time spent on directional questions that Fall term. To begin with, the reference staff was new and not yet that familiar with the library's resources, particularly

those of the more specialized departments like Documents. This may have lead to more intra-library directional referrals. Also, Fall term marked the arrival of a large number of new students who were disoriented and needed directions to other public service areas in the library.

The discussion of the Fall term desk statistics raised the question of whether some directional questions in the UCL might really be ready reference or search questions. With this in mind, the librarians encouraged the information assistants to become more aggressive in their service. When a student asked where to go to "find out where the journals are," the information assistant was instructed to determine what the student actually needed. Often observation showed that a student needed some instruction in using an index to locate articles on a topic rather than simply needing to be pointed toward the bound periodicals. Also, the information assistants were told to question students using the Reader's Guide to determine if they could really use a more specialized periodical index. Simply pointing to the Reader's Guide was insufficient because students often needed subject indexes but were unfamiliar with them. By providing a more individualized reference service, the librarians hoped to learn if the large number of directional questions actually indicated that the UCL lacked the services or

resources needed by a majority of the students and, in fact, if the statistics reflected that there was little use of the UCL reference services. Was the UCL after all, as Wilkinson claimed, only a "screaming success as study halls?" [5]

During succeeding terms, UCL reference services, and particularly the quality of those services, consistently improved. A marked decrease in the proportion of directional questions corresponded conversely to a marked increase in the number of ready reference questions. Exhibit 2 shows the breakdown by questions and the percent of the total number of questions comprised by each category for the academic years 1974-75 and 1975-76.

During the Winter, Spring and Summer 1975 terms, a change occurred in the proportion of directional and ready reference questions. A decrease of 11% in directional questions and an increase of 13% in ready reference questions happened during a term in which the total number of all questions rose 25%. The next two terms witnessed a more modest pace but still followed the same pattern established Winter term. In the meantime, the number of search questions asked dropped to 6% of the total during these three terms.

The four terms during the 1975-76 academic year clearly estab-

lished a pattern in the questions asked at the UCL reference desk. Search questions comprised approximately 3% of all the questions each term, ready reference around 47%, and directional near 50%. This is a very interesting development, especially given the change in the total number of questions asked from term to term. Even Summer term, which had 60% fewer questions than Fall term, had its questions distributed in nearly identical proportions.

Beginning Fall term 1976, a workbook on library skills [6] was assigned to all students enrolled in English 2 and 3, courses required of all undergraduates. [7] The workbook was distributed at the UCL reference desk Fall and Winter terms and sold at the University Bookstore during the Spring term. This practice changed the nature of the reference and instructional services offered by the UCL the previous 2 years. It resulted in thousands of new students entering the library over the course of the year, using the facilities, and asking questions at the reference desk.

The influx of students completing the workbook significantly altered the trend in the proportion of questions asked in the three categories (see Exhibit 3). In addition, there was a marked increase in the total number of questions asked when comparing the same terms for two years. During Fall term 1976 the total number of questions increased by 7% over Fall term 1975, during Winter 1976-77 the total

number increased 27% over Winter term 1975-76, and during Spring term 1977 there was an increase of 35% over Spring term 1976.

The library skills workbook had a tremendous impact on reference desk services. Although the workbook was designed to be self-paced, it contained some typographical errors which confused the students and led to their asking more directional questions than were anticipated. In addition, some of the less motivated students asked a number of superfluous questions because they would not read the directions to the exercises. While the number of search questions remained consistent during Fall term, they nearly tripled over the number asked during Winter term 1975-76. Comparing the number of search questions asked Spring 1976 to Spring 1977, the total number in this case more than doubled. More students than ever were also observed independently using the reference collection. When asked by a librarian how they knew how to use the Statistical Abstract or the P.A.I.S. Bulletin they often said, with a sense of pride, that they had completed the workbook the previous term. This observation was viewed as a major factor for the drop in the proportion of ready reference questions that were asked.

The concensus among the UCL reference staff was that the students who completed the workbook felt comfortable using the UCL collection. The UCL did not have the vast amount of materials encountered in other

library departments. Also, it is likely that having recognized the same familiar faces with whom they had interacted during the period of completing the workbook, the students were encouraged to return and ask for help on search problems.

Conclusion

During the three years that UCL reference desk statistics were maintained for analysis, a vigorous instructional program was also being conducted. In addition to the workbook, self-instructional programs on library resources and an ambitious number of class-related instructional sessions were prepared and conducted. The histogram in Exhibit 4 testifies to the effect that these programs, given in conjunction with the service at the reference desk, had on the actual number of questions asked.

Exhibit 5 provides an overview of the relationship between the type of reference question asked and the respective number of questions asked by category each term. The patterns discussed earlier in this paper are plotted on the graph and the effect of the library skills workbook on each category is quite visible.

These reference desk statistics, therefore, are extremely valuable as workload indicators and to show the effect other types

of instructional services are having on the reference desk. Each term the number of questions asked in each reference category were plotted with the time of day, disclosing that the peak periods of service were between 10:00 A.M. and 3:00 P.M. As a result, the librarians were able to work on projects away from the reference desk in the early morning and late afternoon hours, being only on-call if needed by an information assistant. During peak periods, coverage was increased to meet the demand.

A frequency polygon like the one in Exhibit 1 was prepared each term and attached to a memo which discussed that term's analysis. Copies were circulated among the reference staff and the appropriate library administrators for management purposes. When taken over several terms these statistics are useful for planning a budget around anticipated manpower needs and in certain areas as a quantitative tool for evaluating the impact of instructional programs on the reference desk. In some cases it confirmed opinions on library use based from observation, in others it provided data from which an insightful analysis was made. The experience at Penn State's Main Undergraduate Library, therefore, serves as an example of the value of analyzing reference desk statistics.

REFERENCES

1. Katherine Emerson, "Chairwoman's Remarks," in Katherine Emerson, ed., Symposium on Measurement of Reference (Chicago: LAD, American Library Association, 1974), p. 7.

2. Billy R. Wilkinson, Reference Service for Undergraduates: Four Case Studies (Metuchin, N.J.: Scarecrow Press, Inc., 1972), p. 349.

3. Ibid., p. 12.

4. Information assistants were non-professionals with at least a BA degree. Their duties included staffing the reference desk, giving orientation tours and maintaining the vertical file and college catalog collections.

5. Billy R. Wilkinson, "Screaming Success as Study Halls," Library Journal 95:1567-71 (May 1, 1971).

6. Beverly L. Renford, Library Skills Workbook (University Park, Pa.: Pennsylvania State University Libraries, 1976).

7. Fall term there were 1,050 students completing the workbook; Winter term 925; Spring term 2,200.

APPENDIX

REFERENCE DESK

DATE:

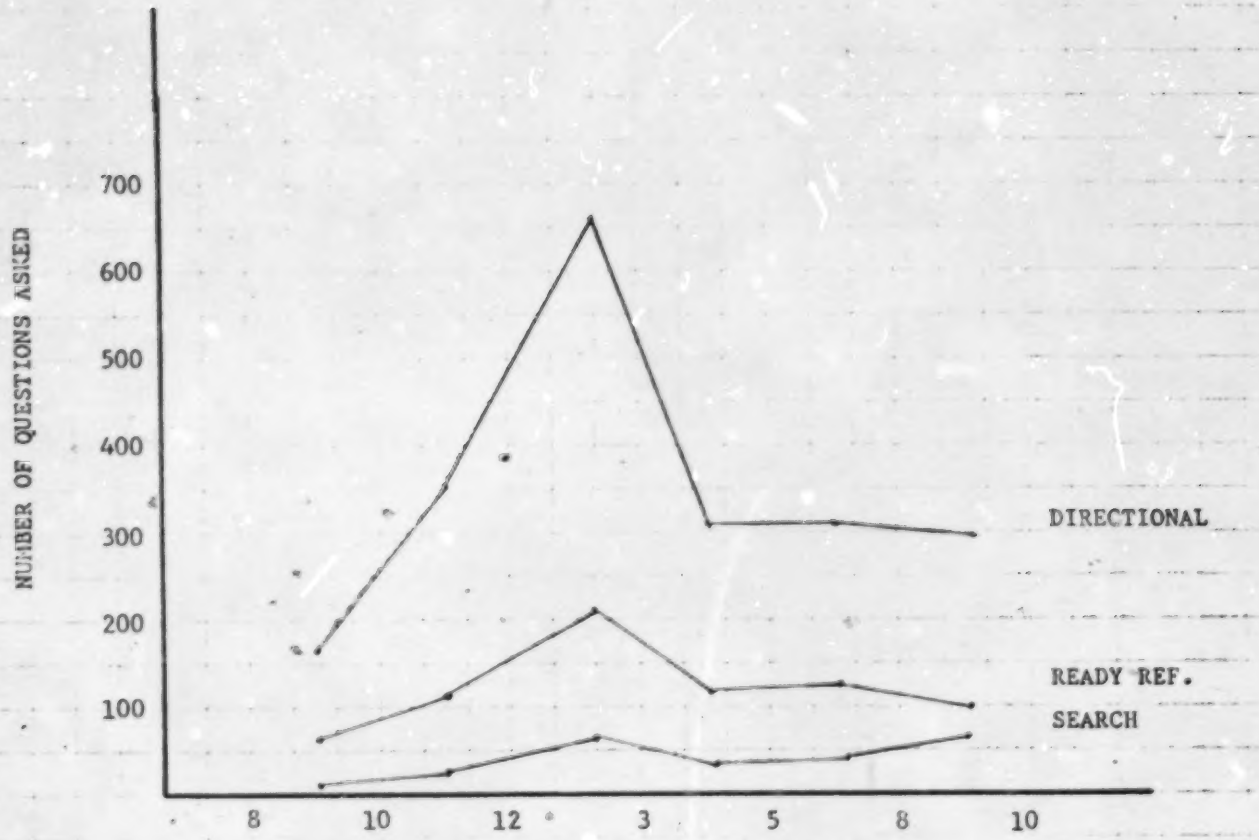
REFERENCE DEPARTMENT STATISTICS

DAY:

Question	Hour:	8-10	10-12	12-1	1-3	3-5	5-6:30	6:30-8	8-10	10-12
Search										
Ready Reference										
Directional										
Total Reference Questions										
Telephone Reference										
Telephone-Switchboard										
Book Requests (Include Inter-Library Loan)										
WORKBOOKS										
Directional										
Handing Out										
Other:										

Exhibit 1

FALL TERM 1974
FREQUENCY POLYGON SHOWING TYPE AND
NUMBER OF QUESTIONS ASKED



TYPE OF QUESTION	HOUR OF REFERENCE SERVICE 8	10	12	3	5	8	10	TOTAL	% OF TOTAL
SEARCH	6	27	64	34	43	64		241	0.08
READY REFERENCE	60	114	212	118	124	99		757	0.25
DIRECTIONAL	164	354	662	311	312	296		2009	0.67
							TOTAL	3007	1.00

Exhibit 2

Number of Questions Asked and Their Percent of the Total, 1974/75-1975/76

	Fall 74		Win 74/75		Spr 75		Sum 75	
Search	241	8%	244	6%	214	6%	118	6%
Ready Ref.	757	25%	1524	38%	1446	40%	799	42%
Directional	2009	67%	2248	56%	1940	54%	1008	52%
	3007		4016		3600		1925	

	Fall 75		Win 75/76		Spr 76		Sum 76	
Search	164	3%	130	3%	121	4%	54	3%
Ready Ref.	2313	47%	2002	46%	1653	46%	971	48%
Directional	2493	50%	2228	51%	1776	50%	984	49%
	4970		4360		3550		2009	

Exhibit 3

Number of Questions Asked and Their Percent of the Total, 1976/77

	Fall 76		Win 76/77		Spr 77	
Search	138	3%	375	6%	236	4%
Ready Ref.	2158	40%	2108	37%	1454	27%
Directional	3067	57%	3413	57%	3749	69%
	5372		5963		5439	

Exhibit 4

HISTOGRAPH SHOWING THE NUMBER OF QUESTIONS ASKED BY TERM

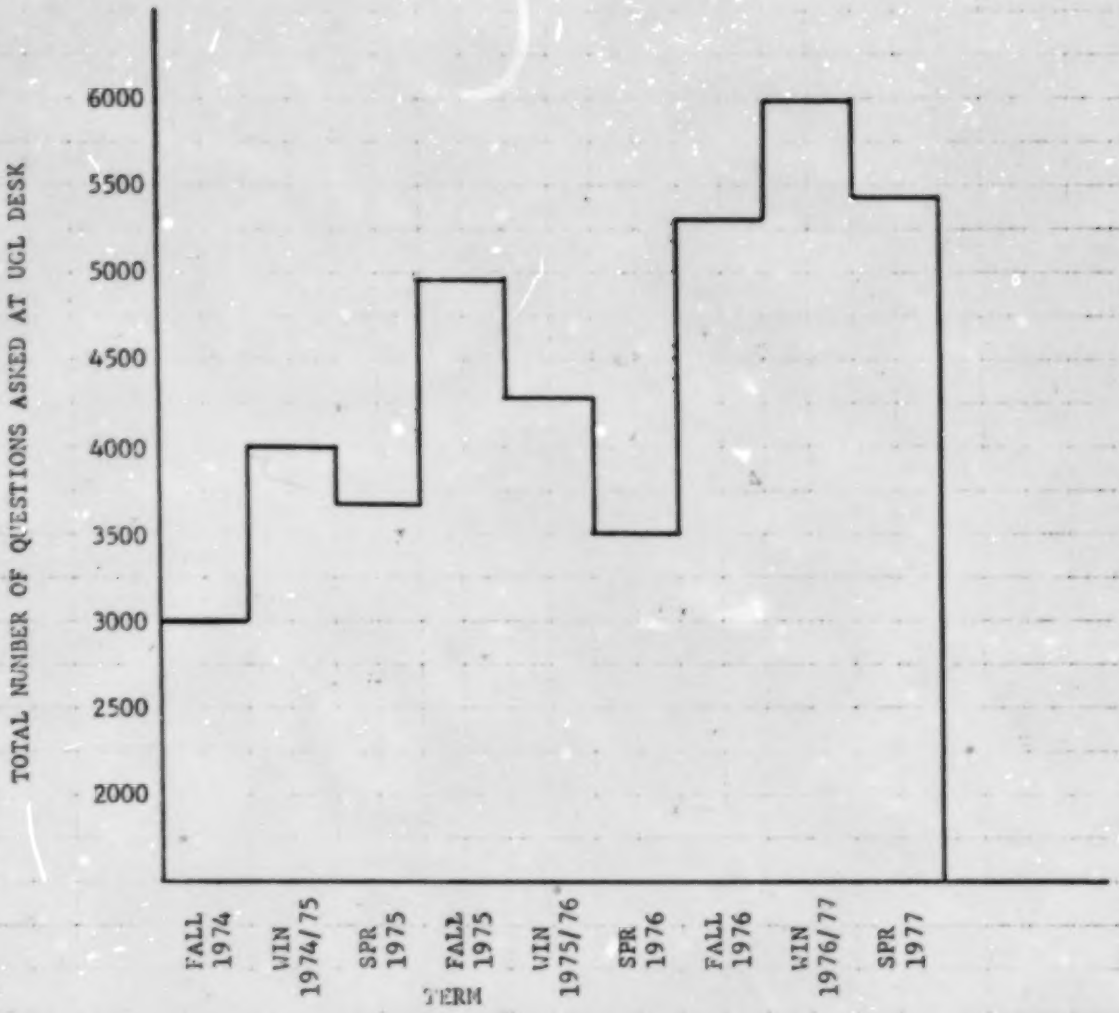


Exhibit 5

FREQUENCY POLYGON SHOWING THE DISTRIBUTION OF QUESTION ASKED BY CATEGORY AND TERM